

## REMARKS

### 35 USC § 102

Claims 7 and 9-10 have been rejected under 35 U.S.C. 102(b) as being anticipated by the Russian reference (1,331,660). Claims 7-9, 15-17 are amended herein. New claim 19 is submitted herein for entry and consideration. The rejection in regards to claims 7, 9-10 as anticipated by reference '660 is traversed for the following reasons. The subject invention as claimed is to a mandrel having a pair of opposed legs having first free ends for connection within opposite ends of a hose and each leg having an opposite end received within opposite respective ends of a tubular connective member extending between the leg opposite ends. No such structure is found in the reference '660. The reference teaches a mandrel comprising a plurality of opposing legs having free ends received within ends of a tube 11. However, reference '660 neither teaches nor suggests opposite ends of arms 4 as being connected by a tubular element through the engagement of such opposite arm ends within opposite ends of such a tubular element. The Examiner has misread the claims as solely teaching the position of free ends of the mandrel arms within a hose. Rather, claims 7, and 9-10 specifically recite the connection of opposite ends of the legs together by means of a tubular element or rod extending between the opposite leg ends. The '660 teaches the connection of opposite ends of arms 4 to a pivot bracket 5 that rotates about a pivot axis 6. There is no bracket 5 common to ends of arms 4 much less a tubular member connecting such arms in the manner claimed. The complicated, multi-piece structure found in the '660 reference is not only deficient in teaching or suggesting the claimed limitations but points to the advantages attained by the subject invention. The '660 reference, being a complicated framework of pivot brackets and support arms, would be much more expensive to manufacture, assemble, and more complicated to use than that of the claimed invention. Thus, the reference not only cannot provide a basis for the rejection of claims 7 and 9-10 but, to the contrary, provides strong evidence of the patentable and non-obvious nature of the invention.

Claims 7-8 have been rejected under U.S.C. 102(b) as being anticipated by the Netherlands reference (NL 9302251). Likewise, this rejection is traversed for the '251 reference fails to teach or suggest each limitation found in claims 7-8. The '251 reference as the Examiner notes does show a mandrel for reshaping tubular elements including a plurality of opposing legs that fit within opposite ends of a hose. However, contrary to the Examiner's contention, the mandrel does not show a hollow tube disposed to receive the free ends of the

mandrel legs. Rather, the tube 26 receives and holds a midsection of the tubular element being reformed, not the free ends of the mandrel. See FIG. 2a that shows the mid-section of a plurality of hoses 46 is held by a tubular clamp, not the ends of legs 42 opposite to leg ends that perform the function of reshaping the hoses. Clearly, while the free ends of legs 42, 44 are positioned within hose ends, the opposite ends of legs 42, 44 are not received within and connected by means of a tubular element extending therebetween. Rather the opposite ends of legs 42, 44 are terminated to the support brackets 34, 36. This is unlike and totally dissimilar to the claimed invention that claims a tubular element or rod that receives and connects ends of opposed hose shaping legs opposite to the hose forming ends of such legs. Bars 38, 40, contrary to the Examiner's position, do not receive ends of any legs 42, 44 therein and do not connect such leg ends. Rather bars 38, 40 connect to a framework to which the ends of the legs are fixed and non-rotatably attached. As a result, the '251 reference teaches a complex framework of fixed support arms that terminate ends of mandrel arms. No structure in the reference can be deemed to connect ends of the mandrel forming legs together by means of a tubular element.

35 U.S.C. 103(a)

Claims 15-17 have been rejected under 35 U.S.C. 102(a) as being unpatentable over the NL '251 reference in view of the Russian SU '660 reference. The rejection is likewise traversed. Claims 15-17 as amended recite a structure that facilitates adjusting means for independently altering the rotation position of the leg laterally (emphasis added) relative an opposite leg. As such, the subject claimed mandrel allows for a change in the relative position of the shaping legs in three dimensions. That is, in three axis of movement. There is no corresponding rotational movement found or possible in the Russian reference '660. The Russian reference, as explained previously, terminates each end of a mandrel leg to a rotating bracket that rotates a leg end axially and thereby can effect an axial displacement of one mandrel leg relative to the opposite mandrel leg. This rotational movement is dissimilar to the claimed invention which provides a lateral rotational adjustment between opposed mandrel leg ends. Such an adjustment in a rotationally lateral direction is not only not taught or suggested by the '660 reference but would be impossible. Reference '660 teaches a rotation of the mandrel legs by means of a bracket in only two planes. Not only is there no tubular connective element joining ends of the mandrel legs, as discussed previously, but neither reference '660 or NL '251 teaches a lateral adjustment of the mandrel legs relative to one another. The Examiner's position that a combination of the two references would

achieve the functional benefits of the claimed invention is, accordingly, erroneous.

Moreover, the conclusion presented by the Examiner that rotation taught by reference '660 would allow for an angular adjustment at each end overlooks the fact that the subject invention can also achieve a bend in one end of a hose that is laterally rotated relative to a bend in the opposite end of the hose.

Claims 7 and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese reference ('121). The rejection is traversed. The Examiner concedes that the '121 reference does not show a bending device having curved mandrels at both ends of the engaging sections that are threaded onto a base rod but nonetheless concludes it would be obvious to do so without pointing to any specific language or teaching in the reference '121 toward that end. It is clear for a modification of the type the Examiner seeks to propose to the '121 reference, there must be some teaching or suggestion in the reference. To establish *prima facie* obviousness, there 1) must be some suggestion or motivation in the art to modify or combine the references; 2) must be a reasonable expectation of success and 3) the combined references must teach or suggest all the claim limitations. In rejecting claims under 35 USC § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

In the subject case, the '121 reference is admitted to be deficient by the Examiner in showing a mandrel having curved opposed ends connected to a center bar by a threaded connection but has presented no teaching in the reference that supports its modification to the claimed invention. The Japanese reference can be used in its embodiment to create a curve in opposite ends of a hose but only by reversing the hose ends in a two step procedure. The deficiencies in such a method in cost and time are considerable. The Examiner acknowledges the advantage (achieved by the claimed invention) of shaping both ends of a hose at the same time. In doing so, the functional deficiencies in the '121 reference in not (emphasis added) providing such a capability cannot be denied. To then claim it would be obvious to eliminate such deficiencies by placing a second curved mandrel end to the '121 reference when the reference has no teaching to make such a modification is pure hindsight. In fact, solving a problem inherent in the '121 reference is strong evidence of the non-obvious nature of the invention.

Still further, the adjustment that the examiner is pointing to in the '121 reference is merely a linear adjustment along the base support; an adjustment not equivalent or comparable to level

and degree of adjustment capable from the claimed invention. A screw threaded attachment of curved mandrel ends to a common center bar allows for a rotary angular alteration in the relative positions of the curved ends as well as for a linear adjustment to the separation distance therebetween. The sliding of one arm in the '121 reference toward the other only achieves an adjustment in the plane of the base member and in no way allows for the same three-dimensional adjustment achievable through the practice of the present invention. Thus, not only does the '121 reference teach a mandrel embodiment that is not capable of simultaneously curving opposite ends of a hose, resulting in a loss of time at a higher cost, but the '121 mandrel also cannot create an three-dimensional adjustment between opposite opposed curved mandrel ends as possible with the present invention. To conclude, as the Examiner proposes, that it would be obvious to modify the '121 reference to eliminate such deficiencies is erroneous and unsupported.

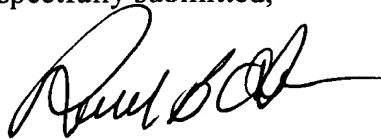
Specifically, there is no teaching in the '121 reference to replace one end of the disclosed apparatus securing means with another securing means. That the reference should be entirely silent about securing means substitution when such a substitution would result in a significantly enhanced functionality is strong evidence of the non-obviousness of the invention. Moreover, as discussed above, using a rotational connection between connected second ends of mandrel is not rendered obvious even were one to substitute a threaded connection between the '121 arms and the brackets that support the arms. Rotation of the arms individually relative to an L-shaped bracket segment is not functionally equivalent to the invention that recites a rotation between an arm segment end and a tubular connective member end into which the second of the arm is rotationally attached.

Applicant has considered the Examiner's response to previously presented arguments, however, the conclusions reached are vigorously disputed. The JP '121 reference does not recognize a simultaneous shaping of a hose into a curved configuration at one time. With regard to Claims 7 and 15, specifically, the JP'121 has no tubular element whatsoever, much less one that receives ends of mandrel arms therein and which connects such ends. The Examiner has produced no prior art that shows a tubular element extending between and receiving second ends of a pair of mandrel arms. No art further has been produced showing such a tubular connective element in which the connection between mandrel arms and the tubular elements allows for a lateral rotational adjustment of one arm to the other. The functional advantage of such a configuration is not found in any of the cited art and such advantages have been explained in detail previously and above. To propose a modification of

any of the cited references in a manner that is entirely unsupported by the references so as to realize such advantages cannot properly support a conclusion of obviousness absent a teaching, indeed any teaching, in any of the references toward such a modification.

Reconsideration and allowance of all pending claims is, accordingly, requested.

Respectfully submitted,



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